AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

1. (Original) A method for fitting a surface to a point group using a computer, comprising the steps of:

a first step for judging reliability of the point group and

a second step for changing the method for fitting the surface to the point group based on a result of the judgment of reliability obtained in the first step.

2. (Original) The method according to claim 1, wherein

the first step comprising judging reliabilities of points composing the point group, and

the second step comprising changing the method for fitting the surface to the point group by varying a weight of each of the points based on the reliability of each of the points.

3. (Original) The method according to claim 1, wherein

data indicating reliabilities of the point group and the points are obtained by three-dimensional measurements.

4. (Original) A device for fitting a surface to a point group using a computer, comprising:

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an obtaining section for determining reliability of each of points composing the point group and

a modifying section for varying a degree of the fitting of the surface to the point group depending on the reliabilities.

5. (Original) The device according to claim 4, comprising:

a weighting section for assigning a weight for each of the points based on the reliability of each of the points, wherein

the modifying section changes a degree of the fitting of the surface to the point group depending on the weights.

6. (Original) The device according to claim 4, wherein

the surface has been prepared in advance of the fitting.

7. (Original) The device according to claim 4, wherein

an amount of data for the surface is smaller than that of the point group.

8. (Original) The device according to claim 4, wherein

the data of the surface includes attribute information associated with form information.

9. (Original) The device according to claim 8, wherein

the data of the surface represents a form of a face, and the attribute information represents characteristic parts of the face.

10. (Original) A system comprising:

a measuring unit for measuring a distance therefrom to a plurality of points on a surface of an object;

a calculator for calculating reliabilities of respective distances of the measured distances;

a processor for modifying prepared data which represents a three-dimensional form using the reliabilities so that a three-dimensional form represented by the modified data resembles a form of the object.

11. (Currently Amended) A computer program product for fitting a surface to a point group ~~that enables a computer to perform the steps of~~ comprising a computer readable storage medium having a computer program stored thereon for performing:

a first step for judging a reliability of the point group and

a second step for changing the method for fitting the surface to the point group based on a result of the judgment of reliability obtained in the first step.

12. (Original) A processor comprising:

an obtaining section for obtaining original data generated by measurements;

a first modifying section for modifying a first standard model based on the obtained data, the first standard model being previously prepared independently of the obtaining of original data;

a second modifying section for modifying a second standard model based on an effect of the modification of the first standard model, the second standard model being relative to the first standard model.

13. (Original) The processor according to claim 12, wherein

the first standard model is a model for skin and the second standard model is a model for skeleton or a model for muscle, the original data being data whose object is a surface of a human head.

14. (Original) The processor according to claim 12, wherein

the first standard model has a plurality of construction points corresponding to which a plurality of control points are defined;

the second standard model has a plurality of construction points corresponding to which some of the control points defined by the first standard model are defined;

the first standard model is modified in accordance with movements of the construction points which move in accordance with movements of the control points; and

the second standard model is modified in accordance with movements of the construction points which move in accordance with movements of the control points.

15. (Original) The processor according to claim 14, wherein

the control points for moving the construction points of the second standard model are corrected when adopting a result of the modification of the first standard model.

16. (Original) The processor according to claim 14, wherein

defined as control points corresponding to the construction points of the second standard

model are control points corresponding to construction points among the construction points of

the modified first standard model which are the closest to the construction points of the second

standard model.

17. (Original) The processor according to claim 14, wherein

defined as control points corresponding to construction points of the second construction

points are control points corresponding to points obtained by projecting the construction points

of the second standard model on the first standard model.

18. (Original) A process comprising the steps of:

obtaining original data generated by measurements;

modifying a first standard model which has been prepared separately from the obtaining

of the original data based on the obtained original data; and

modifying a second standard model corresponding to the first standard model based on a

result of the modification of the first standard model.

19. (Original) The process according to claim 18, wherein

the first standard model has a plurality of construction points, and a plurality of control

points are defined corresponding to the construction points;

the second standard model has a plurality of construction points and some of the control

points defined by the first standard model are defined corresponding to the construction points;

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the first standard model is modified in accordance with movements of the construction points which move with the control points move; and

the second standard model is modified in accordance with movements of the construction points which move with the control points move.

20. (Original) A processor comprising:

an obtaining section for obtaining original data generated by measurements;

a storage section for storing a first data representing a standard skin model of a human head and a second data representing a standard skeleton model or a standard muscle model of the human head, the first data and the second data are corresponding to each other; and

a processing section for modifying the first data and the second data so that the standard skin model and the standard skeleton model or standard muscle model fit with the measured surface form.

21. (Currently Amended) A computer program product for modeling[[,]] comprising a computer readable storage medium having a computer program stored thereon which enables a computer to perform the steps of:

obtaining original data generated by measurements;

modifying a first standard model which has been prepared separately from the obtaining of the original data based on the obtained original data; and

modifying a second standard model corresponding to the first standard model based on a result of the modification of the first standard model.

22. (Original) A device for modifying a surface based on a three-dimensional point group comprising:

a selection section for selecting a plurality of partial areas from the point group and

a modifying section for modifying a surface based on a point group of each of the selected partial areas.

23. (Original) A method for generating a three-dimensional model comprising:

selecting a plurality of partial areas from measurement data obtained by measuring an object and modifying a three-dimensional model based on the measurement data of each of the selected partial areas.

24. (Original) A modeling device for generating a three-dimensional model comprising:

a selection section for selecting a plurality of partial areas from measurement data obtained by measuring an object and

a modifying section for modifying a three-dimensional model based on a measurement data of each of the selected partial areas.

25. (Original) The device according to claim 24, wherein

the modifying section performs modification with respect to the standard model based on the whole measurement data before performing modification based on the measurement data of each of the partial areas.

26. (Original) The device according to claim 24, wherein

control points for modifying the standard model is defined on the standard model, and

at least one of the control points, reduction rate for reducing a number of measurement

data and evaluation function for determining a degree of modification of the standard model is

changed.

27. (Currently Amended) A computer program for generating a three-dimensional

model comprising a computer readable storage medium having a computer program stored

thereon that enables a computer to perform steps of

selecting a plurality of partial areas from measurement data obtained by measuring an

object; and

modifying a three-dimensional standard model based on measurement data of each of the

selected partial areas.

28. (New) The modeling device according to claim 24, wherein the modifying section

modifies whole of the object and the selected partial areas.

29. (New) The modeling device according to claim 24, wherein the modifying section

modifies whole of the object and then modifies the selected partial areas.

30. (New) The modeling device according to claim 24, wherein one of the partial areas

selected by the selection section includes an area overlapping the other partial area.

31. (New)   The modeling device according to claim 24, wherein the data reduction process is performed with respect to data of the partial area selected by the selection section.